Student(sid,Sname,Sage,Ssex) 学生表

sid：学号；Sname：学生姓名；Sage：学生年龄；Ssex：学生性别

Course(cid,Cname,tid) 课程表

cid,课程编号；Cname：课程名字；tid：教师编号

SC(sid,cid,score) 成绩表

sid：学号；cid,课程编号；score：成绩

Teacher(tid,Tname) 教师表

tid：教师编号； Tname：教师名字

|  |  |
| --- | --- |
| Student：学生表 | |
| sid | 学号 |
| sname | 姓名 |
| sage | 年龄 |
| ssex | 性别 |

|  |  |
| --- | --- |
| Course：课程表 | |
| cid | 课程编号 |
| cname | 课程名 |
| tid | 教师编号 |

|  |  |
| --- | --- |
| SC：成绩表 | |
| sid | 学号 |
| cid | 课程编号 |
| score | 成绩 |

|  |  |
| --- | --- |
| Teacher：教师表 | |
| tid | 教师编号 |
| tname | 教师名字 |

问题：

1、查询“001”课程比“002”课程成绩高的所有学生的学号； --子查询+多表关联

select a.sid from (select sid,score from SC where cid='001') a,(select sid,score

from SC where cid='002') b

where a.score>b.score and a.sid=b.sid;

2、查询平均成绩大于60分的同学的学号和平均成绩； --group by

select sid,avg(score)

from sc

group by sid having avg(score) >60;

3、查询所有同学的学号、姓名、选课数、总成绩； --函数+多表+group by

select Student.sid,Student.Sname,count(SC.cid),sum(score)

from Student left Outer join SC on Student.sid=SC.sid

group by Student.sid,Sname

4、查询姓“李”的老师的个数； --去重+模糊查询

select count(distinct(Tname))

from Teacher

where Tname like '李%';

5、查询没学过“张三”老师课的同学的学号、姓名； --子查询+去重

select Student.sid,Student.Sname

from Student

where sid not in (select distinct( SC.sid) from SC,Course,Teacher where SC.cid=Course.cid and Teacher.tid=Course.tid and Teacher.Tname='张三');

6、查询学过“001”并且也学过编号“002”课程的同学的学号、姓名； --多表，子查询，exists（存在）

select Student.sid,Student.Sname from Student,SC where Student.sid=SC.sid and SC.cid='001' and exists( Select \* from SC as SC\_2 where SC\_2.sid=SC.sid and SC\_2.cid='002');

7、查询学过“张三”老师所教的所有课的同学的学号、姓名； --in+子查询+group by+having

select sid,Sname

from Student

where sid in (select sid from SC ,Course ,Teacher where SC.cid=Course.cid and Teacher.tid=Course.tid and Teacher.Tname='张三' group by sid having count(SC.cid)=(select count(cid) from Course,Teacher where Teacher.tid=Course.tid and Tname='张三'));

8、查询课程编号“002”的成绩比课程编号“001”课程低的所有同学的学号、姓名；--子查询

Select sid,Sname from (select Student.sid,Student.Sname,score ,(select score from SC SC\_2 where SC\_2.sid=Student.sid and SC\_2.cid='002') score2

from Student,SC where Student.sid=SC.sid and cid='001') S\_2 where score2 <score;

9、查询所有课程成绩小于60分的同学的学号、姓名； --not in+子查询

select sid,Sname

from Student

where sid not in (select Student.sid from Student,SC where S.sid=SC.sid and score>60);

10、查询没有学全所有课的同学的学号、姓名； --多表+group by+having

select Student.sid,Student.Sname

from Student,SC

where Student.sid=SC.sid group by Student.sid,Student.Sname having count(cid) <(select count(cid) from Course);

11、查询至少有一门课与学号为“1001”的同学所学相同的同学的学号和姓名;-- in+子查询+多表

select sid,Sname from Student,SC where Student.sid=SC.sid and cid in select cid from SC where sid='1001';

12、查询至少学过学号为“001”同学所有一门课的其他同学学号和姓名；--多表+in+子查询

select distinct SC.sid,Sname

from Student,SC

where Student.sid=SC.sid and cid in (select cid from SC where sid='001');

13、把“SC”表中“张三”老师教的课的成绩都更改为此课程的平均成绩；--子查询+多表

update SC set score=(select avg(SC\_2.score)

from SC SC\_2

where SC\_2.cid=SC.cid ) from Course,Teacher where Course.cid=SC.cid and Course.tid=Teacher.tid and Teacher.Tname='张三');

14、查询和“1002”号的同学学习的课程完全相同的其他同学学号和姓名；--子查询+group by

select sid from SC where cid in (select cid from SC where sid='1002')

group by sid having count(\*)=(select count(\*) from SC where sid='1002');

15、删除学习“张三”老师课的SC表记录； --多表

Delect SC

from course ,Teacher

where Course.cid=SC.cid and Course.tid= Teacher.tid and Tname='张三';

16、向SC表中插入一些记录，这些记录要求符合以下条件：没有上过编号“003”课程的同学学号、2、

号课的平均成绩；

Insert SC select sid,'002',(Select avg(score) from SC where cid='002') from Student where sid not in (Select sid from SC where cid='002');

17、按平均成绩从高到低显示所有学生的“数据库”、“企业管理”、“英语”三门的课程成绩，按如下形式显示： 学生ID,,数据库,企业管理,英语,有效课程数,有效平均分 --子查询+函数+group by+order by

SELECT sid as 学生ID

,(SELECT score FROM SC WHERE SC.sid=t.sid AND cid='004') AS 数据库

,(SELECT score FROM SC WHERE SC.sid=t.sid AND cid='001') AS 企业管理

,(SELECT score FROM SC WHERE SC.sid=t.sid AND cid='006') AS 英语

,COUNT(\*) AS 有效课程数, AVG(t.score) AS 平均成绩

FROM SC AS t

GROUP BY sid

ORDER BY avg(t.score)

18、查询各科成绩最高和最低的分：以如下形式显示：课程ID，最高分，最低分 --子查询

SELECT L.cid As 课程ID,L.score AS 最高分,R.score AS 最低分

FROM SC L ,SC AS R

WHERE L.cid = R.cid and

L.score = (SELECT MAX(IL.score)

FROM SC AS IL,Student AS IM

WHERE L.cid = IL.cid and IM.sid=IL.sid

GROUP BY IL.cid)

AND

R.Score = (SELECT MIN(IR.score)

FROM SC AS IR

WHERE R.cid = IR.cid

GROUP BY IR.cid

);

19、按各科平均成绩从低到高和及格率的百分数从高到低顺序

SELECT t.cid AS 课程号,max(course.Cname)AS 课程名,isnull(AVG(score),0) AS 平均成绩

,

100 \* SUM(CASE WHEN isnull(score,0)>=60 THEN 1 ELSE 0 END)/COUNT(\*) AS 及格百分数

FROM SC T,Course

where t.cid=course.cid

GROUP BY t.cid

ORDER BY 100 \* SUM(CASE WHEN isnull(score,0)>=60 THEN 1 ELSE 0 END)/COUNT(\*) DESC

20、查询如下课程平均成绩和及格率的百分数(用"1行"显示): 企业管理（001），马克思（002），OO&UML （003），数据库（004）

SELECT SUM(CASE WHEN cid ='001' THEN score ELSE 0 END)/SUM(CASE cid WHEN '001' THEN 1 ELSE 0 END) AS 企业管理平均分

,100 \* SUM(CASE WHEN cid = '001' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN cid = '001' THEN 1 ELSE 0 END) AS 企业管理及格百分数

,SUM(CASE WHEN cid = '002' THEN score ELSE 0 END)/SUM(CASE cid WHEN '002' THEN 1 ELSE 0 END) AS 马克思平均分

,100 \* SUM(CASE WHEN cid = '002' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN cid = '002' THEN 1 ELSE 0 END) AS 马克思及格百分数

,SUM(CASE WHEN cid = '003' THEN score ELSE 0 END)/SUM(CASE cid WHEN '003' THEN 1 ELSE 0 END) AS UML平均分

,100 \* SUM(CASE WHEN cid = '003' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN cid = '003' THEN 1 ELSE 0 END) AS UML及格百分数

,SUM(CASE WHEN cid = '004' THEN score ELSE 0 END)/SUM(CASE cid WHEN '004' THEN 1 ELSE 0 END) AS 数据库平均分

,100 \* SUM(CASE WHEN cid = '004' AND score >= 60 THEN 1 ELSE 0 END)/SUM(CASE WHEN cid = '004' THEN 1 ELSE 0 END) AS 数据库及格百分数

FROM SC

21、查询不同老师所教不同课程平均分从高到低显示

SELECT max(Z.tid) AS 教师ID,MAX(Z.Tname) AS 教师姓名,C.cid AS 课程ＩＤ,MAX(C.Cname) AS 课程名称,AVG(Score) AS 平均成绩

FROM SC AS T,Course AS C ,Teacher AS Z

where T.cid=C.cid and C.tid=Z.tid

GROUP BY C.cid

ORDER BY AVG(Score) DESC

22、查询如下课程成绩第 3 名到第 6 名的学生成绩单：企业管理（001），马克思（002），UML （003），数据库（004）

[学生ID],[学生姓名],企业管理,马克思,UML,数据库,平均成绩

SELECT DISTINCT top 3

SC.sid As 学生学号,

Student.Sname AS 学生姓名 ,

T1.score AS 企业管理,

T2.score AS 马克思,

T3.score AS UML,

T4.score AS 数据库,

ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) + ISNULL(T4.score,0) as 总分

FROM Student,SC LEFT JOIN SC AS T1

ON SC.sid = T1.sid AND T1.cid = '001'

LEFT JOIN SC AS T2

ON SC.sid = T2.sid AND T2.cid = '002'

LEFT JOIN SC AS T3

ON SC.sid = T3.sid AND T3.cid = '003'

LEFT JOIN SC AS T4

ON SC.sid = T4.sid AND T4.cid = '004'

WHERE student.sid=SC.sid and

ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) + ISNULL(T4.score,0)

NOT IN

(SELECT

DISTINCT

TOP 15 WITH TIES

ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) + ISNULL(T4.score,0)

FROM sc

LEFT JOIN sc AS T1

ON sc.sid = T1.sid AND T1.cid = 'k1'

LEFT JOIN sc AS T2

ON sc.sid = T2.sid AND T2.cid = 'k2'

LEFT JOIN sc AS T3

ON sc.sid = T3.sid AND T3.cid = 'k3'

LEFT JOIN sc AS T4

ON sc.sid = T4.sid AND T4.cid = 'k4'

ORDER BY ISNULL(T1.score,0) + ISNULL(T2.score,0) + ISNULL(T3.score,0) + ISNULL(T4.score,0) DESC);

23、统计列印各科成绩,各分数段人数:课程ID,课程名称,[100-85],[85-70],[70-60],[ <60] --case when then

SELECT SC.cid as 课程ID, Cname as 课程名称

,SUM(CASE WHEN score BETWEEN 85 AND 100 THEN 1 ELSE 0 END) AS [100 - 85]

,SUM(CASE WHEN score BETWEEN 70 AND 85 THEN 1 ELSE 0 END) AS [85 - 70]

,SUM(CASE WHEN score BETWEEN 60 AND 70 THEN 1 ELSE 0 END) AS [70 - 60]

,SUM(CASE WHEN score < 60 THEN 1 ELSE 0 END) AS [60 -]

FROM SC,Course

where SC.cid=Course.cid

GROUP BY SC.cid,Cname;

24、查询学生平均成绩及其名次

SELECT 1+(SELECT COUNT( distinct 平均成绩)

FROM (SELECT sid,AVG(score) AS 平均成绩

FROM SC

GROUP BY sid

) AS T1

WHERE 平均成绩 > T2.平均成绩) as 名次,

sid as 学生学号,平均成绩

FROM (SELECT sid,AVG(score) 平均成绩

FROM SC

GROUP BY sid

) AS T2

ORDER BY 平均成绩 desc;

25、查询各科成绩前三名的记录:(不考虑成绩并列情况)

SELECT t1.sid as 学生ID,t1.cid as 课程ID,Score as 分数

FROM SC t1

WHERE score IN (SELECT TOP 3 score

FROM SC

WHERE t1.cid= cid

ORDER BY score DESC

)

ORDER BY t1.cid;

26、查询每门课程被选修的学生数

select cid,count(sid) from sc group by cid;

27、查询出只选修了一门课程的全部学生的学号和姓名

select SC.sid,Student.Sname,count(cid) AS 选课数

from SC ,Student

where SC.sid=Student.sid group by SC.sid ,Student.Sname having count(cid)=1;

28、查询男生、女生人数

Select count(Ssex) as 男生人数 from Student group by Ssex having Ssex='男';

Select count(Ssex) as 女生人数 from Student group by Ssex having Ssex='女'；

29、查询姓“张”的学生名单

SELECT Sname FROM Student WHERE Sname like '张%';

30、查询同名同性学生名单，并统计同名人数

select Sname,count(\*) from Student group by Sname having count(\*)>1;;

31、1981年出生的学生名单(注：Student表中Sage列的类型是datetime)

select Sname, CONVERT(char (11),DATEPART(year,Sage)) as age

from student

where CONVERT(char(11),DATEPART(year,Sage))='1981';

32、查询每门课程的平均成绩，结果按平均成绩升序排列，平均成绩相同时，按课程号降序排列

Select cid,Avg(score) from SC group by cid order by Avg(score),cid DESC ;

33、查询平均成绩大于85的所有学生的学号、姓名和平均成绩

select Sname,SC.sid ,avg(score)

from Student,SC

where Student.sid=SC.sid group by SC.sid,Sname having avg(score)>85;

34、查询课程名称为“数据库”，且分数低于60的学生姓名和分数

Select Sname,isnull(score,0)

from Student,SC,Course

where SC.sid=Student.sid and SC.cid=Course.cid and Course.Cname='数据库'and score <60;

35、查询所有学生的选课情况；

SELECT SC.sid,SC.cid,Sname,Cname

FROM SC,Student,Course

where SC.sid=Student.sid and SC.cid=Course.cid ;

36、查询任何一门课程成绩在70分以上的姓名、课程名称和分数；

SELECT distinct student.sid,student.Sname,SC.cid,SC.score

FROM student,Sc

WHERE SC.score>=70 AND SC.sid=student.sid;

37、查询不及格的课程，并按课程号从大到小排列

select cid from sc where scor e <60 order by cid ;

38、查询课程编号为003且课程成绩在80分以上的学生的学号和姓名；

select SC.sid,Student.Sname from SC,Student where SC.sid=Student.sid and Score>80 and cid='003';

39、求选了课程的学生人数

select count(\*) from sc;

40、查询选修“张三”老师所授课程的学生中，成绩最高的学生姓名及其成绩

select Student.Sname,score

from Student,SC,Course C,Teacher

where Student.sid=SC.sid and SC.cid=C.cid and C.tid=Teacher.tid and Teacher.Tname='张三' and SC.score=(select max(score)from SC where cid=C.cid );

41、查询各个课程及相应的选修人数

select count(\*) from sc group by cid;

42、查询不同课程成绩相同的学生的学号、课程号、学生成绩

select distinct A.sid,B.score from SC A ,SC B where A.Score=B.Score and A.cid <>B.cid ;

43、查询每门功成绩最好的前两名

SELECT t1.sid as 学生ID,t1.cid as 课程ID,Score as 分数

FROM SC t1

WHERE score IN (SELECT TOP 2 score

FROM SC

WHERE t1.cid= cid

ORDER BY score DESC

)

ORDER BY t1.cid;

44、统计每门课程的学生选修人数（超过10人的课程才统计）。要求输出课程号和选修人数，查询结果按人数降序排列，查询结果按人数降序排列，若人数相同，按课程号升序排列

select cid as 课程号,count(\*) as 人数

from sc

group by cid

order by count(\*) desc,cid

45、检索至少选修两门课程的学生学号

select sid

from sc

group by sid

having count(\*) > = 2

46、查询全部学生都选修的课程的课程号和课程名

select cid,Cname

from Course

where cid in (select cid from sc group by cid)

47、查询没学过“张三”老师讲授的任一门课程的学生姓名

select Sname from Student where sid not in (select sid from Course,Teacher,SC where Course.tid=Teacher.tid and SC.cid=course.cid and Tname='张三');

48、查询两门以上不及格课程的同学的学号及其平均成绩

select sid,avg(isnull(score,0)) from SC where sid in (select sid from SC where score <60 group by sid having count(\*)>2)group by sid;

49、检索“004”课程分数小于60，按分数降序排列的同学学号

select sid from SC where cid='004'and score <60 order by score desc;

50、删除“002”同学的“001”课程的成绩

delete from Sc where sid='002'and cid='001';